

**A new species of the genus *Bembecia* HÜBNER, [1819]
from the european part of Russia**

(Lepidoptera, Sesiidae)

by

OLEG G. GORBUNOV

received 24.VI.1994

Abstract: A new species, *Bembecia volgensis* spec. nov., from the Volga region, European part of Russia, is described and figured.

Zusammenfassung: Eine neue Art, *Bembecia volgensis* spec. nov., aus dem europäischen Teil Rußlands wird beschrieben und abgebildet.

Резюме: Приводится описание нового вида *Bembecia volgensis* spec. nov., собранного на юго-востоке европейской части России (Ульяновская область).

Unfortunately, Sesiidae of the southeastern most part of Europe, in particular the Volga-Ural region, have been poorly known in comparison with other parts of the continent. Indeed, virtually during the last eight decades, nobody studied and even collected clearwing moths in that huge region, most interesting with respect to its natural conditions. Thanks to Dr. VADIM ZOLOTUHIN, I was privileged recently to study a small collection of Sesiidae from the Ulianovsk area, southeastern Russia. Among common and widespread species present in that collection, I have come across a new species of the genus *Bembecia* HÜBNER, [1819], which is described below:

Bembecia volgensis spec. nov.
(figs. 1–5; colour plate XVIIIb, figs. 1–2)

Material

Holotype ♂: Russia, Ulianovsk area, 160 km S of Ulianovsk, Riabina, 13.VII.1993, leg. V. ZOLOTUHIN.

Paratypes: 2 ♂♂, 1 ♀, same locality and date, leg. V. ZOLOTUHIN.

The holotype and 2 paratypes (♂♀) are deposited in the collection of the Zoological Institute of the Russian Academy of Sciences, St. Petersburg (Russia). One paratype (♂) is in the author's collection.

Description (holotype ♂, colour plate XVIIIb, fig. 1)

Alar expanse 17.8 mm, body length 12.2 mm, forewing length 7.5 mm, antenna 4.2 mm.

Head: antenna black with violet sheen, labial palps pale yellow with a broad black strip ventro-externally; frons white to pale yellow with a few black scales medially; vertex black mixed with yellow scales; pericephalic hairs yellow dorsally and pale yellow to white laterally.

Thorax: patagia black with violet sheen dorsally and pale yellow laterally; tegula black with a pale yellow tip and with a white axillar spot; meso- and metathorax black with bronzed sheen; besides that, tegula, meso- and metathorax densely covered with long, hairy-like, yellow scales; pleura of thorax dark brown to black with violet sheen, mixed with pale yellow scales. **Legs:** fore coxa black with violet sheen, with a broad white strip externally, densely covered with long, hairy-like, yellow scales; hind tibia pale yellow with a narrow vague ring both basally and near the base of apical spurs; spurs pale yellow to white.

Abdomen: black with greenish-violet sheen; tergite no. 2 with a narrow pale yellow strip distally; tergites nos. 4, 6 and 7 each with a broad, pale yellow to yellow, distal strip; tergite no. 5 mixed with pale yellow scales medially; sternite no. 4 pale yellow; sternites nos. 2 and 3 with a few pale yellow scales; sternites nos. 5–7 with more numerous pale yellow scales; anal tuft dark brown to black with a few yellow scales laterally and yellow medially.

Forewing: basally black; costal margin nad Cu-stem dark brown mixed with yellow and light brown scales (somewhat more numerous in basal half); anal margin yellow with admixture of dark brown and light brown scales; apical area extremely narrow, pale yellow with a dark brown outer margin; veins R4, R5, M1–M3 pale yellow mixed with a few dark brown scales; discal spot narrow, dark brown, with a narrow, pale yellow strip distally; transparent areas well developed, densely covered with colourless and yellowish scales; cilia dark brown.

Hindwing: transparent; veins dark brown; outer margin dark brown, narrow, about twice as narrow as cilia; discal spot yellow, narrow, triangular, reaching to base of common stem of veins M3–Cu1; cilia dark brown.

♀ (paratype, colour plate XVIIIb, fig. 2)

Alar expanse 15.4 mm, body length 9.0 mm, forewing length 6.5 mm, antenna 4.1 mm.

Head: antenna black with violet sheen; labial palp yellow-orange with a short and narrow black strip basally; frons yellow; vertex black mixed with orange scales; pericephalic hairs yellow-orange dorsally and yellow laterally.

Thorax: patagia black with green sheen; tegula black with bluish sheen, with a narrow strip internally and with a yellow axillar spot; mesothorax black with bluish sheen; metathorax black with a narrow, yellow, caudal margin; pleura of thorax black with bluish-green sheen, with a few yellow scales.

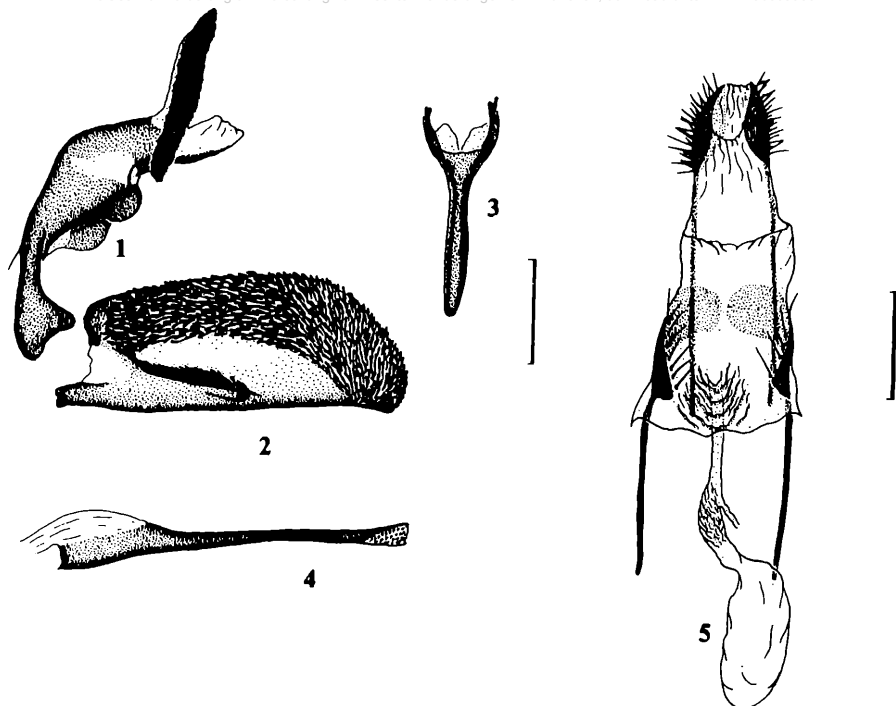
Legs: fore coxa black with blue sheen internally, and yellow externally; hind tibia orange with a narrow yellow strip distally; the anal tuft black with a few yellow scales.

Forewing: basal, costal margin and Cu-stem black; anal margin orange; apical area orange-yellow proximally and black distally; discal spot broad, black with a small orange spot distally; transparent areas well developed, covered with colourless scales; external transparent area divided into 5 cells (cell between veins R3–R4+5 extremely small), about as broad as the discal spot; cilia dark brown.

Hindwing: transparent; veins black; outer margin black, somewhat broader than half of cilia; discal spot black with a few orange scales, broad, trapeziform, reaching to the base of common stem of veins M3–Cu1; cilia dark brown.

Variability

Unknown for ♀♀. The ♂♂ slightly varying in individual size: alar expanse 13.0–18.1 mm; body length 8.0–12.2 mm; forewing length 5.7–7.8 mm; antenna 3.7–4.5 mm.



Figs. 1–4: Male genitalia of *Bembecia volgensis* spec. nov., paratype (genitalic preparation No. 94-01): 1) tegumen-uncus complex, 2) valva, 3) sacculus, 4) aedoeagus. Scale bar: 0.5 mm. Fig. 5: Female genitalia of *Bembecia volgensis* spec. nov., paratype (genitalic preparation No. 94-02). Scale bar: 0.5 mm.

Male genitalia (paratype, preparation no. 94-01)

Tegumen-uncus complex (fig. 1) narrow; scopula androconialis is well developed; crista gnathi lateralis narrow, semicardiform; crista gnathi medialis slightly broader but shorter than crista gnathi lateralis; valva (fig. 2) trapeziform-oval; crista sacculi long, narrow, straight, with pointed setae, distally with a small additional crista with flat-topped setae; sacculus about twice as long as vinculum (fig. 3); aedoeagus (fig. 4) about as long as valva; vesica with a few rows of small cornuti.

Female genitalia (paratype, preparation no. 94-02, fig. 5)

8th tergite narrow; apophysis posteriores ca. 1.4 times as long as apophysis anteriores; ostium bursae narrow, membranous; antrum narrow, about twice as short as apophysis anteriores, membranous; corpus bursae elongate ovoid, without signum.

Diagnosis

Phylogenetically, this new species seems to be the closest to the Mongolo-Siberian *Bembecia bestianaeli* CAPUSE, 1973, but differs strongly from it by the colouration of the frons (black

in the species compared), thorax (completely black in *B. bestianaeli*), abdomen (tergites nos. 2, 4 and 7 each, and only sternite no. 4 with a narrow yellow strip distally in the species compared), and forewing (apical area somewhat broader than discal spot, red-orange; discal spot with a large red spot distally in *B. bestianaeli*). Habitually, being similar to the Transcaucasian *Bembecia parthica* (LEDERER, 1870), male *B. volgensis* spec. nov. can be distinguished from it by the colouration of the antennae (with a longitudinal yellow spot subdistally in *B. parthica*) and long, hairy-like scales on the thorax (silverish in the species compared). The ♀ of the new species resembles that of *B. megillaeformis* (HÜBNER, [1813]), but differs by the virtually smallest size (alar expanse more than 16.0 mm in *B. megillaeformis*). Besides that, the ♀ of *B. megillaeformis* has the inner margin of the fore coxa yellow to pale yellow with a very long narrow black, more strongly developed external transparent area of the forewing, and the shorter discal spot of the hindwing reaches the base of vein M2 only. From other West Palaearctic congeners, *B. volgensis* spec. nov. can be separated easily by the structure of the male genitalia, especially the shape of the crista sacculi.

Bionomy

The host plant is unknown.

Habitat

The type series was collected on slopes of wet ravines in limestone steppe with denudated saline soils along the bank of Volga River.

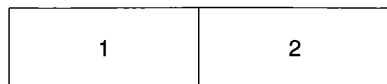
Acknowledgements

I wish to express my sincere thanks to Dr. VADIM ZOLOTUHN (University of St. Petersburg, Russia) for the possibility to study and describe this interesting new species. I am also most grateful to Dr. S. GOLOVATCH (Moscow) for linguistic help, and to Dr. U. EITSCHBERGER (Markt-leuthen, Germany) for editing and publishing this paper. This investigation has been supported in part by grant 0001H No. 117B of the Russian Academy of Sciences, project: Estimation of Biodiversity of Russia.

Explanation of colour plate XVIIIb (p. 623):

Fig. 1: *Bembecia volgensis* spec. nov., holotype ♂.

Fig. 2: *Bembecia volgensis* spec. nov., paratype ♂.



address of the author

Dr. OLEG G. GORBUNOV
Institute of Evolutionary Morphology and Ecology of Animals
Russian Academy of Sciences
Leninsky prospect 33
117071 Moscow V-71
Russia